THE BROCHURE SERIES

OF ARCHITECTURAL ILLUSTRATION.

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THE CATHEDRAL OF SIENA.

THE Cathedral of Siena, or *Chiesa Metropolitana*, situated on the crown of the hill, the highest point in the town, is said to stand on the site of an ancient temple to Minerva, which was in turn succeeded by a church of S. Maria Assunta. The present building was begun early in the thirteenth century, its dome was completed in 1264, and about 1317 the choir was prolonged to the east over the church of S. Giovanni, which stands on the hillside below, and has thus become a kind of crypt. Owing to certain structural defects,—to which the present irregularity of the edifice is, perhaps, partly due,—it was resolved, in 1339, to erect a huge nave, of which the present cathedral was to form merely the transept. Parts of this nave, designed in a beautiful style, still exist on the south side of the cathedral; but only in ruins, for after the plague of 1348 the more ambitious plan was abandoned, and the original structure was completed instead. The church measures about 291 feet long by 80 feet wide; the length of the transept is about 165 feet.

The façade—a combination of pointed and circular styles—from a design by Giovanni Pisano, is composed of red, black and white marbles; and is richly decorated with sculptures representing prophets and angels, by different masters. Mosaics, designed by Mussini and Franchi, were added in 1878. The six-story campanile does not taper toward the top.

The interior consists of a nave and aisles extending to the choir, and is intercepted by a double transept with an irregular hexagonal dome over the centre. The impression produced by the alternate horizontal bands of colored marble in zebra-like stripes, the continuous rows of busts of the popes over the arches, and the pillars with half columns, is so striking as to be frequently found unpleasant. There is no question, however, about the beauty of the ornamentation.

The pavement, a chief point of interest in the cathedral, is unique; for though the pavements of the Baptistery, and those of the church of San Miniato al Monte in Florence, are made after the same method (see BROCHURE SERIES for May, 1895, Vol. I., No. 5, Plates XXXIII. to XL.), they are essentially different in the scheme of design. The Siena pavement consists of representation in marble, with black mastic cement inlays—a simple kind of tarsia work—of scenes from Old Testament history, executed in the liberal spirit of mediæval Christianity. The "Moses," "Samson," "Judas Maccabeus," "Solomon" and "Joshua" are attributed to Duccio; while "Abraham's Sacrifice," "Adam and Eve," "Moses on Mount Sinai," etc., are by Beccafumi. The symbols of Siena and her allied towns, the "Hermes Trismegistus," "Socra-

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tes and Crates," "The Sibyls," and other figures, are by less celebrated Sienese masters.

The execution varies. The oldest scenes, dating from the period of the building, are portrayed in simple outline engraved on the white marble and filled with black cement. When Domenico Beccafumi was called upon to continue the work which had been begun by Duccio (?) the figures and historical representations were, for the most part, already designed on the marble, the outlines filled with cement, and the whole surrounded by ornaments of colored marbles. According to Vasari, Beccafumi amplified this method of treatment by adding gray marbles to represent the half-tones, and thus produced marble pictures in a comparatively complete scheme of light and shade. In a note to Mrs. Foster's translation of Vasari, however, it is stated upon the authority of an inscription on the tomb of Michelagnolo Vanni, that Vanni, who did not live until some time later, was the first to employ this process.

Vasari says further: "The portion of the pavement which Domenico Beccafumi had taken in hand by way of trial proved the attempt to have been entirely successful, whether we consider the beauty of the invention, the excellence of the design, which was most correct, or the rich variety of the figures; insomuch that the master may be said to have formed the commencement of the grandest, most beautiful and most magnificent pavement that had ever been achieved; and in the course of his life, he gradually conducted the greater part of it to completion."

Taking Vasari's premises, we may be prepared to grant the justice of the high praise given Beccafumi; but we may well question the propriety of using designs of this nature for such a purpose, and of executing them in the materials here employed. In his "Church Building in the Middle Ages," Mr. Charles Eliot Norton protests against the placing of such precious work where it must be trodden under foot as incongruous; and the fact that many of the original parts of the Siena pavement, now cracked and worn, have been removed to the Opera del Duomo for safe keeping, and replaced on the cathedral floor by modern copies; and that for years it has been necessary to protect the floor against wear by boards, is evidence of the justice of such a criticism. There is also an aversion, well enough grounded, it seems to us, to the use of pictorial designs of any description for floors, although the feeling does not appear to have troubled mediæval architects. The purely ornamental and geometrical designs of the Roman and Byzantine builders, better related to the rest of the interior and better adapted to the nature of the material employed, are in all respects more logical.

"Independently of the artistic beauty of the designs," says Symonds, in speaking of this work, "of the skill with which the men and horses are drawn in the most difficult attitudes, of the dignity of some of the single figures, and of the vigor and simplicity of the larger compositions, a special interest attaches to this pavement in connection with the twelfth canto of the Purgatorio. Dante cannot have trodden these stones and meditated upon their sculptured histories. Yet when we read how he journeyed through the plain of Purgatory, with eyes intent upon its storied floor, how '*morti i morti, e i vivi parean vivi*,' how he saw 'Nimrod at the foot of his great work, confounded, gazing at the people who were proud with him,' we are irresistibly led to think of the Divine Comedy. The strong, simple outlines of the pavement correspond to the few words of the poet. Bending over these pictures and trying to learn their lesson, with the thought of Dante in our mind, the tones of an organ, singularly sweet and mellow, fall upon our ears, and we remember how he heard *Te Deum* sung within the Gateway of Repentance."

Of the impression made by the interior of this cathedral as a whole, Hawthorne has given, in his "French and Italian Note Books," a description, which, though fragmentary, and taking no account of the architect's point of view, is yet so graphic, so truthful, and

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withal so charmingly appreciative, that we can do no better than end our account with his words.

"Another point," he writes, "to which the stranger's footsteps are drawn by a kind of magnetism, so that he will be apt to find himself there as often as he strolls out of his hotel, is the cathedral. It stands in the highest part of the city, and almost every street runs into some other street which meanders hitherward. . . . .

". . . . I have been several times into the cathedral; . . . . the whole interior is of marble, in alternate lines of black and white, each layer being about eight inches in width, and extending horizontally. It looks very curiously, and might remind the spectator of a stuff with horizontal stripes. Nevertheless, the effect is exceedingly rich, these alternate lines stretching away along the walls and round the clustered pillars, seen aloft, and through the arches; everywhere, this inlay of black and white. Every sort of ornament which could be thought of seems to have been crammed into the cathedral in one place or another: gilding, frescos, pictures; a roof of blue, spangled with golden stars; a magnificent wheel window of old painted glass over the entrance, and another at the opposite end of the cathedral; statues, some of marble, others of gilded bronze; pulpits of carved marble; a gilded organ; a cornice of marble busts of the popes extending round the entire church; a pavement covered all over with a strange kind of mosaic work in various marbles, wrought into marble pictures of sacred subjects; immense clustered pillars supporting the round arches that divide the nave from the side aisles; a clerestory of windows within pointed arches;—it seemed as if the spectator were reading an antique volume written in black-letter of a small character, but conveying a high and solemn meaning. I can find no way of expressing its effect on me, so quaint and venerable as I feel this cathedral to be in its immensity of striped waistcoat, now dingy with five centuries of wear. I ought not to say anything that might detract from the grandeur and sanctity of the blessed edifice, for these attributes are really uninjured by any of the Gothic oddities which I have hinted at. . . . .

"I have done hardly any other sight-seeing except a daily visit to the cathedral, which I admire and love the more the oftener I go thither. Its striped peculiarity ceases entirely to interfere with the grandeur and venerable beauty of its impression; and I am never weary of gazing through the vista of its arches, and noting continually something that I had not seen before in its exuberant adornment. The pavement alone is inexhaustible, being covered all over with figures of life-size or larger, which look like immense engravings of Gothic or Scriptural scenes. There is Absalom hanging by his hair, and Joab slaying him with a spear. There is Samson belaboring the Philistines with the jawbone of an ass. There are armed knights in the tumult of battle, all wrought with wonderful expression. The figures are in white marble, inlaid with darker stone, and the shading is effected by means of engraved lines in the marble, filled in with black. It would be possible, perhaps, to print impressions from some of these vast plates, for the process of cutting the lines was an exact anticipation of the modern art of engraving."

XVII. TO XXIV.,
PORTIONS OF THE PAVEMENT OF THE SIENA CATHEDRAL.

The figure subjects of this pavement, although of first interest to the traveller in Siena, are not of so much value as models or for suggestion to the designer and architect as the beautiful ornamental borders. Consequently, the subjects for illustration in our plates have been chosen from the ornamental portions only. The process employed in this work has already been sufficiently described in the preceding pages, and in the number of the BROCHURE SERIES for May, 1895, in which the Florentine pavements from the Baptistery and San Miniato were illustrated. The transitional character of this design is shown clearly by the examples. The forms are, for the most part, those of the Renaissance; but the manner in which they are used is more Gothic than otherwise, while the figure compositions are thoroughly Gothic in manner.

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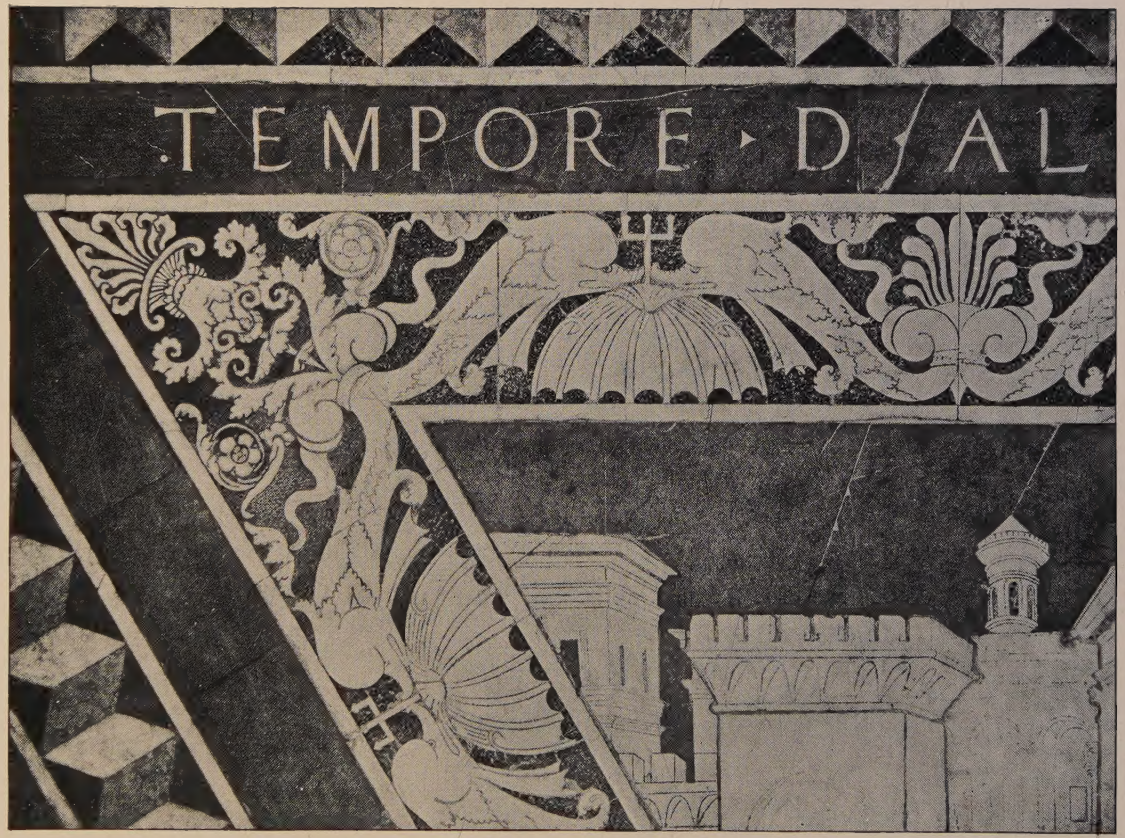
The St. Louis Architectural Club has instituted the happy custom of varying their bi-weekly assemblies by holding, once a month, a meeting at which the members appear in some unusual and distinctive style of costume. Recently, for example, dressed in knickerbockers, and smoking church-warden pipes, they kept "Dutch Night"; and the latest of these novel meetings, "Hard Times Night," was so especially successful that the *St. Louis Republic* devotes two illustrated columns to a detailed description of it, from which the following account has been condensed.

Imagine, says the writer, a large, long room, the walls hung with tapestries embroidered with the monogram of the Club, interspersed with water-color drawings and sketches, some of them competition designs submitted at one time or another by the members, some of them idyls, some of them caricatures. From the ceiling hang Chinese lanterns of every fantastic shape and of every color. Down the entire length of the room stretches a long table, spread with a white cloth. This table is lighted by candelabra — tallow dips stuck in the necks of ink bottles. Rows of yellow beer-steins, plates of sandwiches and other light refreshments, numerous short-stemmed clay pipes varied by a corn-cob or two, and immense tobacco-jars are scattered over the board. In front of the President's chair at the head of the table stand two objects of special interest: the presidential stein, representing a collection of volumes which bear on their backs the names of the old masters of architecture, and the gavel — an empty quart whiskey bottle. Around this table are gathered, in what M. Bourget has called "unbuttoned attitudes," fifty or sixty men, arrayed in every conceivable style of picturesque tatters and cast-off finery; for this is "Hard Times Night" at the Architectural Club.

When all the members had arrived, Mr. Ittner, the President, thumping upon the table with his "gavel," subdued the roar of conversation; and read an address, outlining the work for the coming year. Mr. E. A. Farish followed with a paper on "Cabinet Finish *vs.* Mill Work"; and, to conclude the formal part of the programme, Mr. Fred Fox gave a most interesting lecture on "The Architecture of Rome," illustrated by stereopticon views.

Then came fun of a different sort. First of all the supper was disposed of; and, when steins had been refilled, and pipes relighted, the "Orchestra," composed of members of the Club under the direction of Mr. Ben Trunk, played something from Verdi. Then, with a pipe between his teeth, Mr. Oscar Enders rose; and, shouting instructions to the orchestra, pulled a type-written sheet from his pocket, and sang fourteen verses, full of local allusions and personal hits on his fellow members, to the tune of "Upidee"; and the entire Club joined in the chorus. As an encore, Mr. Enders repeated a song he had produced at the last meeting, detailing the efforts of a certain "Billy Bailey" to win a certain medal.

But Mr. Bailey had his turn. Springing to his feet, and requesting the orchestra to play over "King William was the Best of Men," that he might "catch the time," he started in on a retaliating song; and without a pause, sang thirty-two verses, in which he "roasted" every member of the Club; especially getting back at his friend Enders, who had so lately held him on the gridiron. But hardly had he sat down amid cheering and laughter, when, suddenly remembering a verse that he had not sung, he again rose, and insisted that he be allowed to sing it. Permission being finally



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granted, the omitted verse proved to have President Ittner for its subject.

And so the evening passed, with impromptu songs and impromptu speeches — an evening, concludes the writer, difficult to describe in such a way as to reproduce the spirit of unconventionality and good fellowship by which it was characterized.

The Royal Technical College, Berlin.

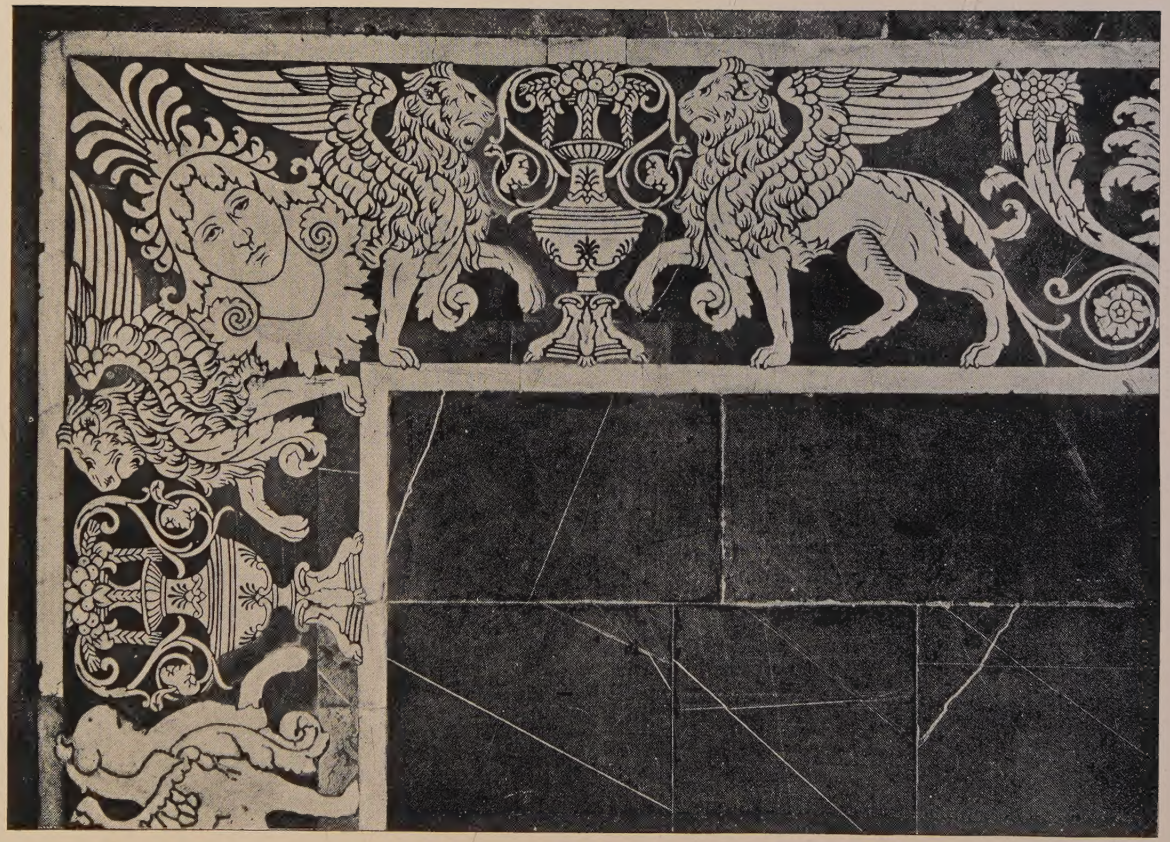
Mr. Edwin O. Sachs, an English architect, recently described in a paper read before the Congress on Technical Education in London, the organization and work of the architectural school of the Royal Technical College in Berlin. This college is the leading school of its kind, according to Mr. Sachs, in Germany, or in German-speaking countries. It is essentially a university, its students now numbering, in the various departments, nearly three thousand; and ranking in their characteristics and pastimes as university students. In its present organization it has existed only since 1884, when the old Architectural Academy of Berlin and the Engineering Academy were amalgamated. Both these schools were owned, and practically managed, by the government as the property of the Prussian people. The new institution is also essentially a Prussian one, on which the government spends annually a considerable sum of money, the professorships being the gift of the king.

The old Architectural Academy officially dates from April 8, 1799; and was primarily intended for the training of government architects and engineers. In its early years it was a scientific school of a practical nature only, paying no attention to architecture as an art. In 1828 under Professor Stier the artistic side of architectural training first received the attention it deserved, and a new building with larger accommodations was furnished. From that time to the reorganization the plan of work has remained unchanged, although undergoing gradual development. In order that the college may offer the best opportunities for the most efficient education, the executive retains the leading men of the time for its professional chairs.

"The Royal Technical College is housed in what is undoubtedly the finest building ever devoted to an educational establishment of this description," says Mr. Sachs; "in fact it is quite a palace, having considerable architectural pretensions." We quote at length a portion of his paper:

"It cannot be too much impressed on those who have witnessed our technical classes carried on in almost squalid surroundings, how important it is that we should give to technical students a home which in every way embodies the achievements of this age of progress in technical science and does credit to the period of architecture to which it belongs. I should much like to describe the beautiful building and its practical equipment, which might well serve as a model to the world, though its conception is perhaps almost too elaborate and too costly from an economic point of view. I must however, content myself with saying that its dimensions are approximately 700 ft. by 300, that it has five courts, of which the central one is covered in, and that it has four stories, all of considerable height. Its lecture-rooms are spacious and numerous, and its class-rooms and studios thoroughly serviceable and well lighted. The number of students for which it was intended was 2,000, and today, although there are 2,913 on the books, it still admirably fulfils its purpose; but the popularity which its educational facilities have won for it, will, no doubt, soon compel a considerable extension.

"But, turning now to the courses available for students of the architectural section, I ought first to say that, besides the subjects taught in the architectural division proper, much that is valuable is to be learned from the civil engineer's department, in the general technical classes, etc., and special facilities are afforded to the architectural student for attending suitable lectures in other sections. The architectural division has eight ordinary and twelve extraordinary professors, and fifteen



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tutors, headed, as I have said before, by a divisional chief elected from among the professors. The courses available include a large number of different lectures on various periods of architectural and art history; further, elementary and advanced drawing, free-hand, perspective, geometrical and architectural draughtsmanship, water-color work and modelling. Then, again, there are classes for the general planning of private dwellings and public buildings of all descriptions, for design in various specific styles, and for divers purposes, the designing of ornament, of furniture, of lead-glazing, metal-work, etc. In addition to these, there are exhaustive lectures on the evolution of particular features in design, such as that of ornament; while among the more practical subjects every form of construction is taught, from the simplest brickwork to the most complicated iron roofing. The characteristics of different materials are also important subjects dealt with, as are heating and ventilation. Special forms of building are also treated as separate subjects, as well as the various equipments. For instance, we find lectures on the necessary appliances for hospitals, prisons and libraries. Building legislation is, moreover, not overlooked. Turning to the lectures which are given in other sections, we find those on mathematics, physics, statics, geology, chemistry, book-keeping, and general elementary law, included in the curriculum of the general science division; and in another department the housing of the working classes—in fact, there are few German requirements which are not fully attended to at this college. I use the expression 'German requirements', advisedly, for sanitation, which really occupies a very secondary position in a German architectural practice, receives scant treatment at this institution. And again, the measuring up and sketching on the spot, which we consider so important, the German architect does not appear to appreciate; and, as a subject of study, it is almost overlooked in the Berlin curriculum. Of course, the student has to select his own subjects, and to distribute them over the four years which he spends at the Technical College; and if we turn at random to lists of subjects taken up by a first year man on, say Tuesday, we may probably find that in the forenoon he attends lectures of an hour each in mathematics, elementary construction, and a class in elementary drawing; and in the afternoon, perhaps, a lecture of one hour on geology of materials, followed by a class of elementary draughtsmanship of from two to three hours' duration, including, say, instruction in the classic orders. If we were then to take a fourth year student's list for the same day, we might, on the other hand, find a two hours' lecture on the history of architecture, and a two hours' class on design in the Renaissance style; then in the afternoon he may give a couple of hours to practical design, such as the planning of public buildings, and attend an hour's lecture on heating and ventilation. From these examples it will be seen that in the earlier stages of the Berlin student's work, he seeks to obtain a foundation in draughtsmanship and science; while at the latter end of his course, he devotes most of his time to the designing of buildings, some historical study, and to gaining a knowledge of special equipment. It would no doubt be interesting to follow the architectural student's career from year to year or from term to term, but this would take too long; and I therefore only quote a couple of examples from a student's time-table:

"But now, after these historical and descriptive notes on the Royal Technical College at Berlin, I would ask if there are any advantages in the system of architectural education adopted by the Prussian Government. To my mind, though the opportunities for study are delightful, there is obviously something wanting in the whole system. Every preparation is made for the student to obtain knowledge, yet the result is by no means as satisfactory as might be expected. Does not this arise primarily from the student starting fresh from school without any previous elementary practical knowledge of construction? He has never been on a building in course of erection, and does not know the difference between a piece of oak and a piece of deal. Further,

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owing to his not having seen an actual moulding cut, he has no idea of the method of its production. For four long years he spends nearly the whole of his time in theoretical study, and, as far as my own experience goes, there are but few men who utilize even the smallest part of their leisure in getting some idea of the nature of practical work. Does not a school where merely the theory of architecture is taught have a tendency to produce an architect of an academic character? Of course, there may be the usual exceptions of brilliant and talented men, or those who are ambitious and energetic and who do not follow the lines laid down for them.

"As to the remedy for any unsatisfactory results, would it not be advisable that a boy should have a whole year's practical work in an office, with the run of some works for at least six months before he starts his elementary studies at the college; and should not every six months of theoretical study be interspersed with three months of practical work? Should not lessons in design be accompanied by lessons in the measurement of existing buildings, to enable the student to grasp the appearance of what he is putting on paper? Would it not be well, too, that the instructors should one and all be men actually in extensive practice?

"We have had under consideration an establishment organized on the most elaborate lines, in which there is but little left to improve, as far as the syllabus of the classes is concerned. The Berlin Technical College has been on its trial for over twelve years; and the results, to my mind, are not at all proportionate to the amount of time and money expended by the architectural student and the Prussian Government. Indeed, as the Berlin Technical College is in many respects a model to those advocating architectural education, so it must also serve as a warning to those extremists who would advocate merely theoretic study as the primary basis of a training in architecture and its actual practice. Much as we can learn from leading men in special technical subjects, the Berlin College only too plainly shows what harm can be done by taking an able man entirely away from his profession, and thus preventing him from keeping in touch with that practical work which brought him into prominence.

"I would conclude by saying that the architectural school at the Royal Technical College of Berlin is an institution well worthy of our attention, and in many respects of our imitation; but, at the same time, we must observe the disadvantages of too theoretical an education, and its evil effect upon a student destined for actual practice. What I have said with regard to the architectural school, I believe, holds good in many respects for the several engineering divisions of the same college."

Notes.

"Of making many books," said Solomon, "there is no end;" and the phrase might be altered to comprehend "novelties" in drawing materials. Some of them pay for the trying—some of them don't. When, however, a novelty appears that bears the name of an old and conservative house, the chances are that it has merit as well as mere newness.

A case in point is Winsor & Newton's soft white india-rubber. We are all familiar with the hopeless slipperiness of ordinary erasers on tracing paper, and with the sponge-rubber's tendency to smut. Neither of these objections can be urged against Winsor & Newton's new soft white rubber. This old and well-known house has an American office at 88 Fulton Street, New York; and full information concerning this soft white rubber, with a catalogue of their line of standard drawing materials, can be obtained by writing to this address.

The Shull overhead pulley is the perfect sash pulley for mullioned windows, for by its use no space need be allowed in the mullions for weights, all the weights being hung at the sides of the group of windows. Diagrams and a description of this method of hanging mullioned windows will be sent to any inquirer by the Folsom Snow Guard Company, Boston.

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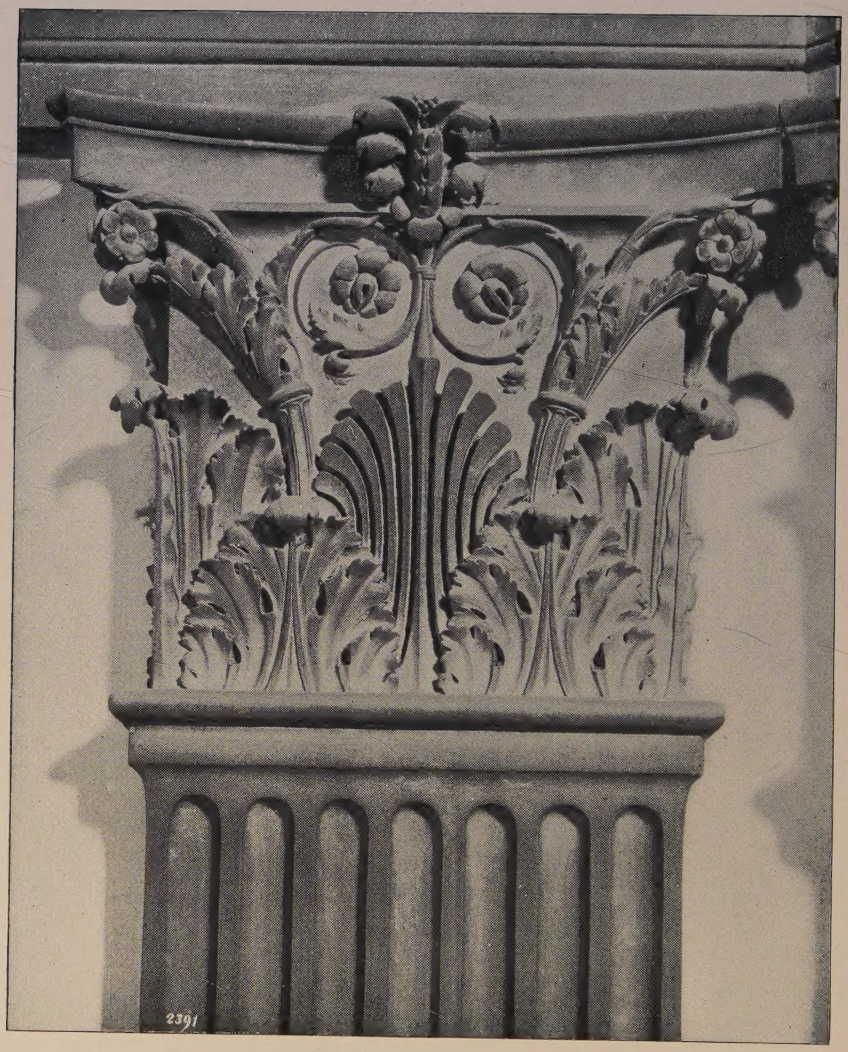

XXV.

Pilaster Capital, Church of San Spirito, Florence.